

INFORMATION DISCLOSURE
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Atty. Docket No.

160-399

Applicant

NAKAMURA et al.

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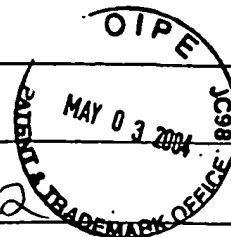
November 24, 2003

Serial No.

10/718,652

IC/A.U.

2828-2822



U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---------------------|-----------------|---------|------|-------|----------|-------------------------------|
| IMS | 5.793,054 | 08/1998 | NIDO | 257 | 18 | |

FOREIGN PATENT DOCUMENTS

TRANSLATION

| | DOCUMENT | DATE | COUNTRY | CLASS | SUBCLASS | YES | NO |
|-----|--------------|---------|---------|-------|----------|----------|----|
| IMS | JP 6-164085 | 06/1994 | JAPAN | | | ABSTRACT | |
| IMS | JP 6-268259 | 09/1994 | JAPAN | | | ABSTRACT | |
| IMS | JP 6-268257 | 09/1994 | JAPAN | | | ABSTRACT | |
| IMS | JP 7-249795 | 09/1995 | JAPAN | | | ABSTRACT | |
| IMS | JP 8-070139 | 03/1996 | JAPAN | | | ABSTRACT | |
| IMS | JP 9-191160 | 07/1997 | JAPAN | | | ABSTRACT | |
| IMS | JP 7-235729 | 09/1995 | JAPAN | | | ABSTRACT | |
| IMS | JP 9-148247 | 06/1997 | JAPAN | | | ABSTRACT | |
| IMS | JP 9-148678 | 06/1997 | JAPAN | | | ABSTRACT | |
| IMS | JP 6-164055 | 06/1994 | JAPAN | | | ABSTRACT | |
| IMS | JP 9-116225 | 05/1997 | JAPAN | | | ABSTRACT | |
| IMS | JP 8-064910 | 03/1996 | JAPAN | | | ABSTRACT | |
| IMS | JP 8-116128 | 05/1996 | JAPAN | | | ABSTRACT | |
| IMS | JP 9-129925 | 05/1997 | JAPAN | | | ABSTRACT | |
| IMS | JP 8-316581 | 11/1996 | JAPAN | | | ABSTRACT | |
| IMS | EP 0 805 500 | 11/1997 | EP | | | X | |
| IMS | JP 7-235729 | 09/1995 | JAPAN | | | ABSTRACT | |

OTHER DOCUMENTS (including Author, Title, Date, Pertinent pages, etc.)

| | |
|-----|--|
| IMS | AKASAKI et al., "Stimulated Emission by Current Injection from an AlGaIn/GaN/GaInN Quantum Well Device." Jpn. J. Appl. Phys., Vol. 34 (1995), pp. L1517-L1519 |
| IMS | NAKAMURA et al., "High-power InGaIn Single-Quantum-Well-Structure Blue and Violet Light-Emitting Diodes." Appl. Phys. Lett., Vol. 67, No. 13 (1995), pp. 1868-1870 |
| IMS | NAKAMURA et al., "Candela-Class High-Brightness InGaIn/AlGaIn Double-Heterostructure Blue-Light-Emitting Diodes." Appl. Phys. Lett. Vol. 64, No. 13 (1994), pp. 1687-1689 |
| | NARUKAWA et al., "Recombination Dynamics of InGaIn Quantum Wells by Time-Resolved Photoluminescence," Technical Report of the Institute of Electronics, Information and Communication Engineers (Oct. 1996) (Japan), pp. 81-88 |
| IMS | WAKAHARA et al., "Growth of GaInN Alloy Layer and Its Composition Inhomogeneity," Technical Report of the Institute of Electronics, Information and Communication Engineers (Oct. 1996) (Japan), pp. 15-20 |
| | NAKAMORI, T., "Unveiling the Structure of Pulse-Oscillate GaN Blue-Violet Semiconductor Laser." Nikkei Electronics (Jan. 1996) (Japan) No. 653, pp. 13-15 |
| | NAKAMURA, S., "Development of Blue Device in Final Stage," Electronics (Feb. 1996) (Japan), pp. 1-3 |
| | NAKAMURA, S., "Latest Progress in Nitride-Based Blue/Green LED and Semiconductor Laser," International Forum "Blue Light-Emission" Project of Hoso-Bunka Foundation, Inc. (May 1996) (Japan) pp. 53-60. |

*Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.

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2822

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|----------------------|-----------------|---------|---------------------|-------|----------|-------------------------------|
| IMS | 5,684,309 | 11/1997 | McIntosh et al | 257 | 24.91 | |
| | 4,862,471 | 8/1989 | Pankove | 372 | 45.01 | |
| | 5,646,953 | 7/1997 | Naito et al | 372 | 46.01 | |
| | 5,642,376 | 6/1997 | Olbright et al | 372 | 45.99 | |
| | 5,475,700 | 12/1995 | Iwata | 372 | 45.01 | |
| | 5,247,533 | 9/1993 | Okazaki et al | 372 | 42.45.01 | |
| | 5,959,307 | 9/1999 | Nakamura et al | 257 | 14 | |
| | 5,679,965 | 10/1997 | Schetzina | 257 | 103 | |
| | 5,412,226 | 5/1995 | Rejman-Greene et al | 257 | 21 | |
| | 5,751,013 | 5/1998 | Kidoguchi et al | 257 | 13 | |
| | 5,689,123 | 11/1997 | Major et al | 257 | 190 | |
| | 6,005,258 | 12/1999 | Manabe et al | 257 | 13 | |
| IMS | 5,247,533 | 9/1993 | Okazaki et al | 372 | 45.01 | |

FOREIGN PATENT DOCUMENTS

| DOCUMENT | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION YES NO |
|--------------|---------|---------|-------|----------|-----------------------|
| 0 675 552 A1 | 10/1995 | Europe | | | |
| 6-21511 | 1/1994 | Japan | | | |
| 3-290984 | 4/1990 | Japan | | | |
| 4-218994 | 8/1992 | Japan | | | |
| 7-074431 | 3/1995 | Japan | | | X |
| 61-156788 | 7/1986 | Japan | | | X |
| 08/290218 | 10/1996 | Japan | | | X |
| 6-268257 | 6/1994 | Japan | | | X |
| 6-177423 | 6/1994 | Japan | | | X |
| 7-235723 | 9/1995 | Japan | | | |
| 4-68579 | 3/1992 | Japan | | | |
| 4-242985 | 8/1992 | Japan | | | |
| 6-177423 | 6/1994 | Japan | | | |
| 6-21511 | 1/1994 | Japan | | | |
| 6-237039 | 8/1994 | Japan | | | |
| 7-297447 | 11/1995 | Japan | | | |
| 6-232451 | 8/1994 | Japan | | | X |

OTHER DOCUMENTS (Including Auth r, Titl , Date, Pertinent pages, tc.)

| | | | |
|-----------|----------------------|-----------------|----------|
| *Examiner | <i>John M. Szwed</i> | Date Considered | 12-19-05 |
|-----------|----------------------|-----------------|----------|

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2822

OTHER DOCUMENTS (including Author, Title, Date, Pertinent pages, etc.)

| | |
|--|---|
| | Narukawa et al Phys. Rev. B Vol. 55, No. 4, pp R1938-1941-1/97 Recombination dynamics of localized excitons in $\text{In}_{0.20}\text{Ga}_{0.80}\text{N-In}_{0.05}\text{Ga}_{0.95}\text{N}$ multiple quantum wells |
| | Narukawa et al Appl. Phys. Lett. 70 (8), pp 981-983, 2/1997 Role of self-formed InGaN quantum dots for exciton localization in the purple laser diode emitting at 420 nm |
| | Narukawa et al Appl. Phys. Lett., Vol. 74, No. 4 pp 558-560 1/99 Radioactive and nonradiative recombination processes in ultraviolet light-emitting diode composed of an $\text{In}_{0.02}\text{Ga}_{0.98}\text{N}$ |
| | Nakamura et al Jpn. J. Appl. Phys., Vol. 35, pp L74-L76, Part 2, No. 1B, 1/96 InGaN-Based Multi-Quantum-Well Structure Laser Diodes |
| | Nakamura et al Jpn. J. Appl. Phys., Vol. 35 (1996), pp L217-220, Part 2, No. 2B, 2/96 InGaN Multi-Quantum-Well Structure Laser Diodes with Cleaved Mirror Cavity Facets: |
| | Nakamura et al Appl. Phys. Lett. 69 (11), pp. 1568-1570, 9/96 Optical gain and carrier lifetime of InGaN multi-quantum well structure laser diodes |
| | Jpn J. Appl. Phys. Vol. 34 (1995) pp. L1332-L1335, Part 2, No. 10B, 15 Oct. 1995, "Superbright Green InGaN Single-Quantum-Well-Structure Light-Emitting Diodes" |
| | Technical Report of IEICE, ED96-100, CPM96-78 (1996-10), pp. 15-21 |
| | Technical Report of IEICE, ED96-110, CPM96-88 (1996-10), pp. 81-88 |
| | Appl. Phys. Lett., 38 (11) June 1981 pp 835-837 |
| | |
| | |
| | |

*Examiner

Date Considered

12-19-05

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.